

# **Attachment**

**Proposed Amendments to  
A.B. 2528 (Lowenthal)**

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**As Amended April 12, 2004**

SECTION 1. Section 116455 of the Health and Safety Code is repealed.

SEC. 2. Section 116455 is added to the Health and Safety Code, to read:

116455. (a) When a drinking water source ~~that is used by a~~ *delivered by a* public water system for human consumption is first discovered to contain a contaminant in excess of a maximum contaminant level, a response level, or a notification level established by the department, then the following shall occur within 30 days of the discovery:

(1) If the public water system is a wholesale water system, then the person operating the wholesale water system shall notify the wholesale water system's governing body and the water systems that are directly supplied ~~that drinking water by the wholesale water system and that receive blended, or raw water from that source.~~ *If the wholesale water system is a water company regulated by the California Public Utilities Commission, then the wholesale water system shall also notify the commission. The commission, in coordination with the department, in the exercise of its general and specific powers to ensure the health, safety and availability of drinking water served by the utilities subject to its jurisdiction, may order such further action which, in its discretion, is necessary to ensure a water supply that is wholesome, potable and in no way harmful or dangerous to public health.*

(2) If the public water system is a retail water system, then the person operating the retail water system shall notify the retail water system's governing body and the governing body of ~~any~~ the local agency in which users of the drinking water reside. *If the retail water system is a water company regulated by the California Public Utilities Commission, then the water system shall also notify the commission. The commission, in coordination with the department, in the exercise of its general and specific powers to ensure the health, safety and availability of drinking water served by the utilities subject to its jurisdiction, may order such further action which, in its discretion, is necessary to ensure a water supply that is wholesome, potable and in no way harmful or dangerous to public health.*

(b) The notification required by subdivision (a) shall identify the drinking water source(s), its type, the origin, if known, of the contaminant, the maximum contaminant level, response level, or notification level, the concentration of the detected contaminant, and the operational status of the drinking water source.

(c) For purposes of this section, the following terms have the following meanings:

(1) "Drinking water source" means an individual groundwater ~~source~~ well, an individual surface water intake, or in the case of water purchased from another water system, the water at the service connection.

(2) "Local agency" means a city or county, or a city and county.

(3) "Notification level" means the concentration level of a contaminant in ~~a~~ drinking water

***source delivered for human consumption that the department has determined, based on available scientific information, does not pose a significant health risk but warrants notification pursuant to this section of the governing body of the area in which the water is served. Notification levels are non-regulatory, health-based advisory levels established by the department for contaminants in drinking water for which maximum contaminant levels have not been established and which have been found in a drinking water source. Notification levels are established as precautionary measures for contaminants that may be considered candidates for establishment of maximum contaminant levels, but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels and are not drinking water standards.***

- (4) “Response level” means the concentration of a contaminant in ~~a drinking water source delivered for human consumption~~ at which the department recommends that additional steps, beyond notification ~~pursuant to this section of the governing body by the operator of the retail public water system~~, be taken to reduce public exposure to the contaminant. Response levels are established in conjunction with notification levels for contaminants that may be considered candidates for establishment of maximum contaminant levels, but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels *and are not drinking water standards*.
- (5) “Retail water system” means a public water system that supplies water directly to the end user.
- (6) “Wholesale water system” means a public water system that supplies water to other public water systems for resale.

## **Attachment**

**Examples of Problematic Recycling Requirements Resulting From  
Regional Boards' Application of the Antidegradation Policy**

## **Examples of Problematic Recycling Requirements Resulting From Regional Boards' Application of the Antidegradation Policy**

**Prepared by the  
WaterReuse Association, California Section  
March 22, 2004**

The Water Code requires that recycling permits be consistent throughout the State, using uniform criteria developed by the Department of Health Services (DHS). Despite this requirement, inconsistencies occur as part of the regional board permitting process. These variations are generally not justified by differing local conditions but instead derive from inconsistent applications and interpretations of State law, guidance and policy. This situation has led to overly restrictive regulation and added costs, creating obstacles to achieving the full potential for water reuse. This issue was addressed by the State Recycling Task Force, which led to Recommendation 4.3 in the Recycling Task Force Report.<sup>1</sup>

This problem is clearly illustrated by the inconsistent application by Regional Boards of the State's Antidegradation Policy, either through the use of Department of Health Services (DHS Action Levels (ALs) in both nonpotable and potable recycling permits, or through the establishment of ultra-conservative permit limits for other constituents, such as salts. Examples are provided below for both cases.

### **What Does the State's Antidegradation Policy Say?**

State Water Resources Control Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality of Waters in California" establishes the state's policy on antidegradation. This policy allows water quality to be altered provided that "any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies." The Policy also provides that "[a]ny activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained." It should also be noted that the Water Code defines recycled water as a "valuable resource," (*see* Section 13050(m)), and sets forth the Legislature's finding that the use of recycled water constitutes the development of new basic water supplies (*see* Section 133511).

### **What are Action Levels?**

ALs are *non-regulatory levels* established by DHS) to address *emerging* contaminants that have not yet undergone the rigorous process for establishment of Maximum Contaminant Levels (MCLs). An AL is defined as the level of a chemical in drinking water that *does not* pose a significant health risk to people ingesting that water on a daily basis. It is calculated using standard risk assessment methods for non-cancer and cancer endpoints, and typical exposure assumptions, including a 2-liter per day ingestion rate, a 70-kilogram adult body

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<sup>1</sup> *Recycled Water Task Force Final Report: Water Recycling 2030 Recommendations of California's Recycled Water Task Force*, June 2003.

weight, and a 70-year lifetime. ALs have not, however, undergone formal review for regulatory consideration. Because there are no regulatory consequences of ALs for drinking water purveyors, ALs are set very conservatively, with no consideration of attainability. ALs are also moving targets created and frequently revised by DHS, and are not subject to formal public review.<sup>2</sup>

Because ALs may be monitored but are not enforceable limits, the only “action” required when an AL is exceeded is notification of the governing body for the city or county where the water is served. When DHS creates an action level it also establishes a level at which it recommends that the well be removed from service, *usually 10 to 100 times the action level*, depending on the type of hazard that the chemical poses. There is no official term for this level and the recommendation to remove a well from service is DHS policy, not in statute.

### Examples of Inconsistent Applications of ALs

To illustrate this inconsistency in practice of applying AL in permits, the following tables provide examples of cases for recent permits issued for non-potable and indirect potable water recycling projects.

<b>1. Non-Potable Reuse Projects</b>		
	Case Study 1	Case Study 2
Agency	Ventura County Waterworks District No. 1	Irvine Ranch Water District
Permit Date	January 24, 2002	December 19, 2001
Regional Board	Los Angeles	Santa Ana
Type of Treatment	Tertiary	Tertiary
Type of Recycling	Surface irrigation, construction, in-plant cleaning, impoundment	Crop and landscape irrigation, toilet flushing, decorative fountains, landfill dust control, soil compaction activities
Amount of Recycled Water Used	≈ 0.3 mgd	1 mgd - year round 6 mgd - seasonal
Are ALs Included in Permit?	Yes - Narrative requirement <sup>1</sup>	No

<sup>2</sup> To illustrate this point, the AL for N-nitrosodimethylamine (NDMA) has been revised at least three times from 2 ng/L to 20 ng/L to 10 ng/L.

1. Non-Potable Reuse Projects		
	Case Study 1	Case Study 2
Is Monitoring for ALs Included in Permit?	No - The permit does require annual effluent monitoring for priority pollutants, but only a few of the DHS ALs are priority pollutants. <sup>2</sup>	No - The permit does require quarterly or annual effluent monitoring for priority pollutants, but only a few of the DHS ALs are priority pollutants; the permit also requires the use of methods per 40 CFR 136, which would not be sensitive enough for those few priority pollutants that are ALs
Antidegradation	Effluent Limitation A.8 in the permit says that “Recycled water shall not cause a measurable increase in organic chemical contaminants in groundwater.” <sup>3</sup> Yet Finding # 18 states that the EIR for the project “identified no significant impact to water quality as a result of the use of recycled water.”	Not addressed in permit for recycling. <sup>4</sup>
<p>1 “Recycled water shall not contain trace, toxic and other constituents in concentrations exceeding the current applicable maximum contaminant or action levels for drinking water established by the State DOHS or at levels that adversely affect the beneficial uses of receiving groundwater.”</p> <p><sup>2</sup> This may be why many recycling agencies are not aware that they have potential compliance problems and have not raised this as an issue. Also, they are using Methods 40 CFR 136, which are not sensitive enough to detect concentrations for most AL compounds at the designated levels. There are no approved analytical methods available for compounds with ALs that have sensitive enough detection levels to determine compliance.</p> <p><sup>3</sup> No justification is provided on how this specifically addresses the State’s Antidegradation Policy.</p> <p><sup>4</sup> This is a joint NPDES/reuse permit. Antidegradation is addressed for surface water discharges in Finding #44, which acknowledges that the Regional Board considered antidegradation pursuant to 40 CFR 131.12 and the State Antidegradation Policy and the “water quality of the receiving waters is not expected to degrade as a result of the discharge.”</p>		

## 2. Indirect Potable Reuse Projects

	Case Study 1	Case Study 2
Agency	City of Los Angeles Department of Water and Power, City of Los Angeles Department of Public Works, Los Angeles County Department of Public Works, and, Water Replenishment District of Southern California	Orange County Water District
Name of Project	Harbor Water Recycling Project – Dominguez Gap Barrier Project	Interim Water Factory 21 (WF 21) and Groundwater Replenishment System (GWRS) and for the use of the product water for groundwater water recharge at the Talbert Gap Seawater Intrusion Barrier and Kraemer/Miller recharge Basins
Permit Date	October 2, 2003	March 12, 2004
Regional Board	Los Angeles	Santa Ana
Type of Treatment	Advanced waste treatment - begin with tertiary effluent and apply microfiltration, reverse osmosis, lime stabilization, and disinfection (chlorination)	Advanced waste treatment - begin with secondary effluent and then apply microfiltration, reverse osmosis, and advanced oxidation process (AOP) that includes hydrogen peroxide addition and UV irradiation; the GWRS will also provide decarbonation and lime stabilization to protect the pipeline from corrosion
Type of Recycling	Indirect potable reuse - injection for the Dominguez Gap Barrier Project	Indirect potable reuse - injection for the Talbert Gap Barrier Project and surface spreading at the Kraemer/Miller spreading basins
Amount of Recycled Water Used	5 mgd	Interim WF 21 - 5 mgd GWRS - up to 70 mgd



## 2. Indirect Potable Reuse Projects

	Case Study 1	Case Study 2
Recycled/Potable Water Blend	50% recycled water and 50% potable water	Phased approach to 100% recycled water for Talbert Gap injection starting with 75 % recycled water and 25% potable water (75:25); for GWRS spreading, a 75:25 blend will be used
Time of Travel to Closest Drinking Water Well	20 years	Talbert Barrier - 24 months GWRS spreading basins - 8 months
Are ALs Included in Permit?	Yes – Numeric limits for 48 specific compounds with the exception of boron <sup>1, 2</sup>	No
Is Monitoring for ALs Included in Permit?	Yes – Monthly to quarterly effluent monitoring and quarterly groundwater monitoring is required for the 48 ALs to determine compliance	Yes - quarterly recycled water monitoring is required for 11 compounds designated as "unregulated contaminants," of which 8 are ALs.
Enhanced Source Control Requirements?	Yes	Yes
Monitoring for Emerging Contaminants?	Yes	Yes
Requirement for Providing Replacement Water if Wells can no Longer be Used as a Source of Drinking Water Due to the Recharge Project	Yes	Yes

<b>2. Indirect Potable Reuse Projects</b>		
	Case Study 1	Case Study 2
Antidegradation	<p>Finding # 28 is included to justify the use of ALs and states:</p> <p>“However, if a contaminant is present over its AL, the water resource is considered to be contaminated and therefore degraded. Hence, in this Order the recycled water is required not to contain trace or toxic contaminants exceeding the ALs.” Yet Finding #40, which refers to the DHS responsibility of evaluating degradation under Section 13540 of the Water Code, states that:</p> <p>“Compliance with the requirements in the criteria [draft July 2003 version which does not require limits for ALs) would likely not result in degradation of the receiving groundwater.”</p>	<p>Findings #35 - #37 convey that compliance with the Order ensures that the proposed recharge will not degrade the quality of water in the receiving aquifer as a source of water supply for domestic purposes</p>
<p><sup>1</sup> The permit limit for boron is based on the Basin Plan groundwater objective of 1.5 mg/L rather than the AL of 1 mg/L. The performance-based interim limit of 6.1 mg/L is effective until October 2, 2006 after which compliance with the 1.5 mg/L limit must be achieved. The permit also requires the City to conduct a series of investigations to reduce boron in the effluent. The permit does not specifically refer to compliance with the AL of boron of 1 mg/L after the compliance deadline.</p> <p><sup>2</sup> It should be noted that the permit limit for perchlorate is 4 ug/L based on the AL in effect at the time the permit was issued. On March 11, 2004, DHS revised the AL for perchlorate to 6 ug/L based the March 2004 Public Health Goal of 6 ug/L established by the Office of Environmental Health Hazard Assessment.</p>		

## Conclusion

Los Angeles Regional Board staff have indicated on several occasions that alternatives to the use of ALs as enforceable limits are limited, and that they would reconsider the practice if there were other viable approaches to protecting groundwater. As illustrated by the above case studies, Region 8 has identified a workable alternative approach. As a matter of policy, and to provide direction to the regional boards, the SWRCB should direct regional boards that advisory ALs should not be included as enforceable limitations in water recycling permits. Selected ALs may be included as performance goals and subject to monitoring and reporting where warranted.

## **An Example of Application of Antidegradation Policy to Establish Limits in Nonpotable Reuse Permits**

The Los Angeles Regional Water Quality Control Board (LA Regional Board) has taken a severe and, in our view, inappropriate approach to interpreting Resolution No. 68-16 in setting permit limits for reuse permits to prevent degradation of water supplies. Certainly the application of Department of Health Services Action Levels is one example,<sup>3</sup> but this approach is also now being used to regulate other constituents, such as salts, in a manner that may ultimately curtail or eliminate recycling. To illustrate this problem, the following information is provided on the City of Los Angeles (City) efforts to reuse recycled water from the Donald C. Tillman Water Reclamation Facility (DCT).

### Background

In 1986, the LA Regional Board adopted Water Recycling Requirements (WRRs) for irrigation for the DCT, which included a chloride limit of 100 mg/L<sup>4</sup>, the same level designated in the NPDES permit for discharge of DCT effluent to the Los Angeles River, portions of which are unlined and thus allow for infiltration to groundwater.<sup>5</sup> At present, recycled water from DCT is predominantly used for in-plant treatment needs, with a de minimis amount used to irrigate the City's Japanese Garden and landscaped areas within the plant grounds.<sup>6</sup> Wildlife Lake and Balboa Lake, and the Japanese Garden ponds, located in the Sepulveda Basin and Sepulveda Dam Recreation Area, receive approximately 27 mgd (about 30,000 acre-feet per year) of recycled water that flows through these water bodies en-route to the Los Angeles River. The 6.5-acre Japanese Garden introduces more than 10,000 visitors per year to the tangible benefits of recycled water.

During the drought that began in 1987, the mix of water imported into Los Angeles was forever changed with a resulting higher chloride concentration in the blend, which increased levels of chlorides in DCT effluent. Consequently, the DCT effluent has never consistently complied with the 100 mg/L chloride limitations. Since the 1990s, the chloride level has continued to rise in DCT effluent, very likely due to ever higher percentages of imported water in the overall supply, as well as the City's aggressive water conservation program resulting in more concentrated treatment plant influent. For example, looking at more recent data, from 1998 through 2003, the minimum chloride concentration in DCT effluent has been 90 mg/L with a maximum concentration of 161 mg/L.

In response to the drought that began in 1987, the LA Regional Board adopted a Drought Policy (Resolution 90-04) in 1990 that provided a 3-year variance from applicable chloride water quality objectives in surface waters based on the sum of the chloride concentration in the water supply tributary to a wastewater treatment plant and a chloride loading factor of 85 mg/L to account for

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<sup>3</sup> See "Action Levels and Recycled Water: Toward a More Reasoned Approach," Concept Paper Prepared by the WaterReuse Association, California Section, February 13, 2004 and "Examples of Conflicting Recycling Regulations by Regional Boards: The Use of Action Levels in Water Recycling Permits," Prepared by the WaterReuse Association, California Section, March X, 2004).

<sup>4</sup> This limit appears to be based on the Basin Plan groundwater objective of 100 mg/L; at the time the permits were issued the surface water objective for chloride was 150 mg/L.

<sup>5</sup> For comparison, chloride limits in other WRRs permits issued at approximately the same time, contained a wide variety of values, some without an obvious basis. For example, WRRs issued to the County Sanitation Districts of Los Angeles County's water reclamation plants (WRPs) had the following limits: 1) Long Beach - 250 mg/L (basis unknown); 2) Los Coyotes WRP - 250 mg/L (basis unknown); 3) Pomona WRP - 150 mg/L (groundwater objective); 4) San Jose Creek WRP - 250 mg/L (basis unknown); 5) Valencia WRP - 300 mg/L (basis unknown); 6) Saugus WRP - 300 mg/L (basis unknown); and 6) Whittier Narrows WRP - 100 mg/L (groundwater objective).

<sup>6</sup> The amount of recycled water used of irrigation is so small in comparison to the in-plant uses, it is not specifically recorded.

chloride contributions from industry, businesses and homes. The Drought Policy was renewed in 1993 and again in 1995. Recognizing the need for a long-term solution, in 1997, the LA Regional Board amended the Basin Plan to revise the chloride water quality objective for the Los Angeles River to 190 mg/L, and the City applied for and received a change in the allowable chloride limit in the DCT NPDES permit to 190 mg/l.

In 1995, the LA Regional Board issued WRRs for the use of up to 10,000 acre feet per year (AFY) of DCT tertiary effluent for groundwater recharge in the Hansen Spreading Grounds in the San Fernando Valley. The Los Angeles Department of Water and Power (LADWP) constructed the \$55-million East Valley Water Recycling Project (EVWRP), 75% of which was funded with state and federal grants. This permit contained no limits for chloride. In fact, chloride was intended to be used as an intrinsic tracer to track the movement of reclaimed water to monitoring and potable production wells (at that time the effluent chloride concentration was 139 mg/L). Modeling conducted for the project (using a higher concentration of 144 mg/L) showed that even though chloride levels in the recycled water exceeded the groundwater basin objectives, and there would be some localized increases in groundwater chloride concentrations, *the direct percolation of water into the underlying groundwater would not significantly modify water quality*. The permit did include chloride requirements for monitoring wells to verify the model predictions.

Due to community concerns regarding the proposed indirect potable reuse aspect of this project, the project was withdrawn, and LADWP is now focusing on using the 10,000 AFY of DCT effluent originally intended for recharge, for irrigation and industrial uses in the San Fernando Valley. At present, LADWP has plans to first connect large recycled water customers including the Hansen Dam Recreation Area, Valley Generating Station, and Angeles National Golf Course in the eastern portion of the Valley, the Sepulveda Basin in the central portion of the Valley, and Pierce College in the western portion of the Valley. Smaller users in the vicinity of these pipelines would also be connected over time with a present goal of fully utilizing the 10,000 AFY originally intended for groundwater recharge. Unlike the original project where 10,000 AFY of DCT effluent was to be applied at one location with the expressed purpose of augmenting groundwater, LADWP's new approach will result in this water being delivered to many areas in the San Fernando Valley, essentially eliminating the localized effects seen in the groundwater modeling of the original proposal. In addition, the irrigation projects will be operated using best management practices for water conservation and minimization of incidental runoff greatly reducing the rate at which chlorides could reach the groundwater table.

#### Problematic Issue

Early in 2001, in preparation for delivering recycled water to Woodley Golf Course in the Sepulveda Basin, LADWP staff contacted the LA Regional Board to inquire about the applicability of the salinity standards in Section 13523.5 of the Water Code<sup>7</sup> to utilization of DCT effluent for irrigation purposes in the San Fernando Groundwater Basin since the effluent often exceeded the 100 mg/l chloride limit in the WRRs. On February 5, 2001, LA Regional Board staff stated that use of DCT effluent for irrigation would not be considered a violation based on Water Code Section 13523.5, but would not provide this answer in writing. In May 2001, LADWP wrote a letter to the LA Regional Board expressing a plan to begin delivering recycled water to Woodley Golf Course on August 1, 2001. LADWP put these plans on hold upon learning from LA Regional Board staff that the use of

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<sup>7</sup> This portion of the Water Codes states that "A regional board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the basin plan."

recycled water for irrigation at Woodley Golf Course might in fact be viewed as a violation of the WRRs.

On February 2, 2004, LA Regional Board staff met with LADWP and Bureau of Sanitation staff to discuss concerns and issues related to irrigation use of recycled water within the San Fernando Basin. At that meeting, LA Regional Board staff informed LADWP that they had significant concerns over the proposed reuse project because they believed that the effluent would degrade the basin - in this case they cited to chloride levels rising above the *background* groundwater chloride concentration of 22 mg/L, not the groundwater *objective* of 100 mg/l. LADWP was also told that the Regional Board permitting staff had concerns about the current reuse of DCT effluent, and were considering referring this matter to enforcement staff. The City is currently considering whether to discontinue use of DCT effluent at the existing reuse sites. LADWP was asked to provide an excessive amount of information to the Regional Board to justify the use of approximately 440 AFY for the proposed irrigation at Woodley Golf Course, the first irrigation customer scheduled to receive DCT recycled water with a connection completed in 2001. The project sits idle due to this unresolved issue. The LA Regional Board also expressed concerns regarding possible incidental percolation at the Japanese Gardens, Lake Balboa, and the Wildlife Lake.

As a first step, LADWP has conducted an evaluation to determine the relative impacts of using 10,000 AFY of recycled DCT water versus potable water (it should be noted that irrigation has a broad geographic application and results in substantially less recycled water ever reaching the groundwater than the groundwater recharge project, which directly places recycled water in one portion of the groundwater basin with minimal change in water quality). The analysis assumed a recycled water chloride concentration of 190 mg/L. The preliminary results of the analysis have shown that when 10,000 AFY of imported water is replaced with 10,000 AFY of recycled water, the average chloride loading in the San Fernando Basin would theoretically increase from approximately 31 mg/L to 45 mg/L (and TDS would increase from approximately 225 mg/L to 257 mg/L). These calculations clearly show that the long term affects of using recycled water will not result in groundwater chloride and TDS concentrations in excess of the Basin Plan objectives (including the most stringent chloride objective of 50 mg/l in the area northeast of San Fernando Road and the Verdugo Fault), and therefore the use of recycled water will not degrade the groundwater basin.

The LA Regional Board's approach to this issue is in conflict with the position of DHS. Because irrigation with recycled water at agronomic rates is not intended to recharge groundwater, and any recharge that occurs is merely incidental, DHS does not regulate irrigation projects in the same manner as recharge projects. If the Regional Board takes the extreme interpretation that any increase above the underlying chloride groundwater concentration of 22 mg/l is not allowed, then by that standard, no replenishment of local groundwater with imported water could occur anywhere in the Los Angeles region, which would lead to significant problems with depletion/mining of local groundwater supplies and salt water intrusion. Furthermore, this approach would dictate that only native groundwater could be used to irrigate contiguous vertical geographical area - a model that is not only impractical, but also nonsensical.

### Conclusion

Water Code Section 13529 specifies that a substantial portion of the future water requirements of the state may be economically met by the beneficial use of recycled water and established a statewide goal to recycle 1,000,000 AFY by 2010. Use of recycled water in the San Fernando Valley is a major component of the City's future water supply, and clearly fits the definition of an activity that is

beneficial to the people of the State. The above analysis demonstrates that the use of DCT effluent for irrigation will result in a small increase in chloride and TDS loading to the San Fernando Basin, but will not cause any of the Basin Plan objectives to be exceeded. Therefore, based on applicable State law and policies, it is apparent that LADWP's request to the Regional Board to revise the chloride limit in the WWRs for irrigation use to 190 mg/l is appropriate.